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Art. I.—*Practical Hints on Planting Fruit Trees.*

The planting of fruit trees requires more practical knowledge and particular attention than is generally apprehended by the inexperienced cultivator: for from a mismanagement in planting may be traced, in many cases, not only a lingering and unfruitful growth of the tree, but, in many cases, little effort in vegetation after planting and a certain death of the tree in a few years. This defect may be traced, in many cases, to improperly planting too deep, which, in my practice, I have found a universal error in fruit trees in small city gardens, and other places, when the thing has been done by inexperienced hands. Planting too deep is more particularly exemplified in the apple, the cherry, and those kinds of trees whose roots naturally grow near the earth's surface: — deep planting places such roots in a location where they cannot receive their wonted stimulants, as the influence of the *sun*, *air*, and the like; and the food that is conveyed to them, under such circumstances, is in a *crude, acid* state, and destitute of those fertilizing qualities it acquired nearer the earth's surface. This consequence will always happen to trees planted too deep, as the cherry, apple, and indeed all kinds that do not *strike* roots from the main stem, as the willow, button-ball, and many kinds of forest trees, and shrubs, which, when planted too deep, lose their original roots, and replace them from the stem near the earth's surface. In contrarity to the above a mismanagement often happens in the planting of trees, by their roots being planted too shallow, in which case the drought effects

their *fibrous* roots, and they cannot cling to, and draw nutriment from, the soil; they are, therefore, eventually dried up, and the following season the main roots have to protrude new *fibres* to draw nutriment from the soil.

The *true* system for planting trees is to follow their natural depth and location as much as possible, which can easily be obtained by examining the depth and natural position of the roots before its removal.

From the many authors I have perused I have not read any satisfactory description of a "method of planting fruit trees. They all very correctly agree, that the hole intended for the tree should be dug larger than the circumference of its roots, in order to give them a free expansion without cramping them in the hole, which is often the case of inexperienced hands. The next consistent thing agreed upon is the breaking up, mixing and pulverizing the bottom of the hole, so that the under tier of roots may strike freely and quickly be established in the soil: after this preparation, the planting is recommended to be done, by placing the tree in the centre of the hole, filling it up about half way and then gently shaking it upwards in order to draw the roots in their proper position, and treading close the fine earth to them. This method I cannot admit to be correct either in theory or practice; for in most cases the roots must certainly be forced out of their natural position; in the first place, by pressing the upper tier of fibrous roots to the bottom of the hole with the earth and treading, which should, according to their natural position, be placed near the earth's surface. In the second place, the roots are drawn *up* and pressed *down* by the shaking of the tree, and, instead of their laying in a regular expanded horizontal manner, if examined, will be found to be bent in an irregular manner: the over treading also displaces the roots, and the consequence is, that many of the best fibrous roots being partly injured and out of their natural position either die or have to make new roots from their leaders in order to draw a proper nourishment to support the tree. Hence many fruit trees, after planting, remain for several years in an almost dormant state, when *fruit-buds* are formed instead of *wood-buds*, which, if allowed to flower and bear fruit, will dwarf the tree in a manner that it never assumes the size and habit it would acquire if properly planted at first.

In the practice of planting fruit trees, the operator should

make himself well acquainted with the natural growth and habit of both the roots and branches of the tree; for it will be found that different kinds of trees have quite a contrary natural position of their roots; for instance, as before stated, the cherry and apple tree roots near the surface of the soil, whilst the pear perforates much deeper into the sub-soil. All these positions should be carefully examined and understood before planting, for it is in vain to reverse the position of roots to any good purpose; indeed when it is done it is an act of violence imposed on nature and its ill effects will soon be discovered in the tree.

In the practice of planting, I recommend that the natural position of the roots of the tree be examined, the hole dug wider than their circumference, the bottom of it well broken up, &c., the tree placed in the centre, and the bottom tier of roots placed in an expanded manner, then apply some fine earth over them as a covering, being careful that no cavity is left under the *bole* of the tree; after this layer of roots is properly placed and covered, then prepare to lay the upper tier in their natural expanded position, being careful not to cramp or bend them, but let their fibres be fully extended; this done, fill up the hole with well pulverized earth a little above the surface, and rather highest near the stem of the tree; the surface may then be gently trod and the work is done.

That the tree should be supported by stakes, the ground kept in good order, &c., are too well known to require any comment, only that they should be strictly attended to.

E. S.

Art. II.—*Manning's Book of Fruits.*

The following notice of Manning's Book of Fruits, from the pen of J. J. T. an able writer in the Genesee Farmer, we give to our readers, presuming it will be read with interest, by all who are engaged in Horticulture.

This work should be in the hands of every cultivator of good fruit in the northern States, and especially of nurserymen. Its title, "*A Descriptive Catalogue of the most valuable varieties of the Pear, Apple, Peach, Plum, and Cherry, for New England culture,*" will explain its character. It is a small duodecimo volume, of 118

pages, containing a few pages of excellent prefatory remarks on the proving of fruits, but chiefly occupied with short descriptions of such as the author has himself tried and found worthy of culture.

It also contains 32 pages on the cultivation of fruits, including the currant, gooseberry, raspberry, strawberry and grape, by John M. Ives.—The catalogue contains 50 varieties of the apple, 81 of the pear, including a large number of the new Flemish varieties, 15 of the peach, 20 of the plum, and 14 of the cherry; besides a very short catalogue of hardy ornamental trees and shrubs, adapted to cultivation at Salem, the residence of the author. It also contains well executed lithographic figures of Williams' Bon Chretien pear, the Easter Beurre, Coe's Golden Drop plum, and the Black Tartarian cherry.

The great merit of this work is that the information it contains is not second hand, but is without exception the result of the personal observation and experiment of the author. No specimen is described but such as has been actually identified by him; no synonims are quoted, and the authority of preceding authors no farther referred to, than to adopt the names in the Catalogue of the London Horticultural Society, "the most complete work on this subject," as the author observes, hitherto offered to the public." We are, however, much disappointed in one particular. The descriptions are generally too short and imperfect to be of much practical utility. The book, it is true, is all it professes to be,—a Descriptive Catalogue; but we had hoped, from the unequalled means which the author possesses of furnishing full descriptions of so many proved varieties, that we should have been furnished with a work, so much needed at the present time, containing full and accurate descriptions of the *distinctive characters* of fruits. A statement of the *quality* of the fruit described, would, in several instances, have been an improvement. The great imperfections of works of this kind, now existing, and especially those of American origin, which with the exception of descriptions copied from European authors, are exceedingly meagre, or at best contain statements of *general*, not *distinctive* characters, renders such a work exceedingly desirable. The only one which we have seen, which at all approximates to such a production, is Floy's edition of Lindley, but that is but imperfectly adapted to the United States. The qualification of the author of the Book of Fruits for furnishing so desirable a work, will be un-

derstood when it is known that for fourteen years he has made the cultivation and proving of varieties of fruit, his unremitting study and pursuit; that he has identified more varieties than any other person in America, and more probably than at any establishment in Europe, except those of the London Horticultural Society and of Professor Van Mons, and that he has obtained the best fruits cultivated in these two celebrated establishments. The following extracts will show the course pursued, and the extent and accuracy of the experiments:

"The Pomological Garden was commenced in 1823, with the design of forming a large collection of specimen trees of such varieties of foreign and native fruits as were hardy enough to endure the inclemency of a northern winter. After a strict examination of the produce of these trees, carefully comparing the wood, the leaf, and the fruit, with the figures and descriptions in the most popular works on Pomology, it was intended to select, for permanent cultivation, those varieties which were at once fitted for the climate of New England, and of high merit in themselves. In furtherance of this purpose, we have assiduously culled from American catalogues, all that we judged worthy of trial, and imported from the first European establishments, the fruits most in repute with the writers of their respective countries. We have never limited ourselves to one specimen, but have in every instance, procured trees of each name from many different sources, in order the more surely to arrive at correct conclusions respecting their identity, as well as to multiply our means of estimating their comparative value."

With regard to the results of these experiments, now published in the present work, the author says:

"With the exception of Peaches, we recommend no fruit that will not ripen in any part of New England or New York, and in the southern part of Canada. Our selections have been made from nearly four hundred kinds, which we have raised yearly. Experience has taught us that many fruits, highly extolled by European writers, and doubtless of great excellence in their native soil, either perish or degenerate in our colder regions; and of these and all others which we have found improper in any respect for cultivation, we design hereafter to publish a catalogue."

"We do not claim for all the varieties herein enumerated, the distinction of first rate fruits; some are second rate, admitted in

consideration of their size, beauty, and abundant bearing, though their flavor is not the most delicious. The essential characteristics of a first rate tree are, health, vigor and fertility; those of a first rate fruit are magnitude of size, beauty of shape and color, and richness of flavor. But a small number of fruits, uniting all these qualities, is known to horticultural science throughout the world. Besides, in regard to the taste of a fruit, the judgment of individuals greatly varies; what one person would pronounce exquisite, might to another seem merely tolerable. In commendation, however, of the kinds described in this manual, we confidently declare our conviction, that no possessor of any or all of them would willingly relinquish their culture for the purpose of regrafting his trees with any other varieties."

The pleasure, which the collection and cultivation of valuable kinds, and more especially the propagation of new varieties, would afford persons of leisure and taste, has been too frequently overlooked. The following remarks, in recommendation of this pursuit, are well worthy of notice, though it is an error to suppose it more noble than the study of Natural History, which lies at the very foundation of Horticultural science:

"To a young man, with the advantage of fortune, and a familiarity with modern languages, researches of this nature would open an inexhaustible source of enjoyment. He could scarcely be more honorably or usefully occupied than in collecting and identifying fruits, and introducing them to the notice of his countrymen; nor better rewarded than in witnessing his anticipations, from year to year, continually realized and continually renewed. The same ardor which characterizes the collectors of shells, birds, and insects, would produce, in Horticulture, far more desirable and more noble results.

"A division of the pursuit, so that the attention of one person could be exclusively directed to one species of fruit, would probably greatly facilitate the progress of investigation, and lead to many satisfactory conclusions respecting the varieties most worthy of cultivation. If France has produced her Duhamel, Belgium her Van Mons, and England her Thompson, is it unreasonable to seek among gentlemen of leisure and education in the United States for one, who following in the footsteps of these illustrious men, with the advantage of the light derived from their researches, shall com-

pensate for the long delay of the Experimental Garden, promised by our own Horticultural Society."

In common with other cultivators, our author has been seriously annoyed and retarded in his researches by the depredations of the birds, especially as it regards the cherry. "The last season," says he, "we had but few perfect specimens, except the Bigarreau. We expected to prove and bring into notice many new and valuable sorts, and our disappointment may be imagined at finding ourselves in every instance anticipated by these innocent depredators." We quote this chiefly for the purpose of suggesting, what we are confident would prove an effectual remedy for this evil, that is, the employment of *nets* to cover the tree during the season of ripe fruit. In this case, the exterior branches only could be reached. The expense of suitable nets for several trees, oiled or varnished for their preservation, would at most be only a few dollars, and if trees ripen successively, but few would be wanted at a time. Select varieties could at least be thus protected.

In allusion to these depredators, however, he has the following very just remarks. The fact relative to the usefulness of the Cedar bird, will be new to most readers, and if not sufficient to entitle it to protection, should certainly receive attention, and not be lost sight of in horticultural economy:

"In speaking as we have, of the annoyances sustained from birds, we are still fully pursuaded that these plunderers, as they are sometimes called, more then compensate for their occasional inroads upon our orchards by their services in the spring, and also during their incubation, in destroying insects. *We too often, perhaps, notice the former, while the latter are remote, or not obtrusive.*

"In early spring and during the breeding season, we see them every minute of the day in continual progress, flying from the nest for a supply, and returning on rapid wing with a grub, a caterpillar, or a small reptile. The numbers captured by them in the course of these travels, are incredibly numerous, keeping under the increase of these races. We have seen the Ampelis, or Cherry bird, that remarkably silent and dove-like [?] species, in great numbers early in spring, and also during the time of nidification upon our apple trees, when the canker worm was about half grown, destroying them in great numbers. It is also known to every observer of nature, how extremely fond our common and familiar robin is of grubs,

those insidious enemies to our garden crops, as well as the slimy slug, which often infest our young pear trees; and any individual who may have had the robin as a cage bird, is aware of the quantities of insects, or worms, he will devour in a day; and when we take into view the circumstance of these birds having usually two broods in a season, of four each, it will give us at least some idea of the quantity of this peculiar food required for at least four months in each year. And although called plunderers, they are in fact benefactors likewise, seeming to be appointed by nature as agents for keeping nnder the increase of these races. Nearly all our hard-billed or granivorous birds, are in the spring and early part of our summer decidedly insectivorous. 'Public economy and utility,' says one, 'no less than humanity, plead for the protection of the feathered race; and the wanton destruction of birds, so useful, beautiful and amusing, if not treated as such by the law, ought to be considered as a crime by every moral, feeling and reflecting mind!"

While there is much to commend in this volume, we notice a very few defects. Among those which are trifling, is the orthography of the name *Seckel*, which is here corrupted into "*Seckle.*" The former mode of spelling, is as well established at Philadelphia, where this variety of the pear originated, as that of any other family name. That superlative fruit, the *Swaar*, is thus faintly commended: "This is a large apple, the form round, somewhat flat, the skin is very smooth, of a light yellowish green, without any red; the flesh is juicy and well flavored, but not rich."* In a list of *fiftyone* varieties of the apple, there are but *five* described as *sweet*, three of which are winter apples; as this description of fruit is not only desirable at all times for ordinary use, but is becoming exceedingly valuable for feeding farm stock, a greater number, more especially those ripening in summer and autumn, would be important.

But that which we particularly object to in this volume, is the error, frequently alluded to, and evidently adopted by the author, of the degeneracy of varieties by old age. This opinion so strenuously advocated by the late President Knight, seems to have had its origin in the decline of some varieties in ungenial situations. In opposition to this theory may be adduced the opinion of the most distinguished phytologists of the age, among whom are Mirbel, De

* With us, this fine fruit often has a rough skin, inclining to russet near the stem; and is commonly of a rich, yellow color when fully ripe.

Candole, Lindley, and Nuttall, who in common with others, consider the buds of each tree as containing within themselves, all the rudiments of so many distinct vegetables, which may be transferred by ingrafting, and thus form many distinct individuals, each again subject without limit, to produce additional ones; the trunk of the tree thus sustains a race of successive annual plants, itself gradually passing from living to dead matter. Thus, as it is merely the support of those buds, "to say," says Nuttall, "that these partake of the age and accidents of the trunk on which they were evolved, is improbable if not impossible, as they can in fact be influenced only by the stock to which they are last transferred."

But we need not refer to theory in disproof of this opinion; facts abundantly show its fallacy. The propensity is always strong to draw general conclusions from limited observation; and those identical varieties which Knight referred to as in a state of decline, in proof of his theory, were in other and more genial situations, perfectly healty and retaining all their original excellence. "The Golden Pippin," says Lindley, "one of the most celebrated and esteemed apples of this, or perhaps any other country, has been considered by some of our modern writers on Pomology to be in a state of decay, its fruit of inferior quality in comparison to that of former times, and its existence near its termination. I cannot for a moment agree with such an opinion, because we have facts annually before our eyes, completely at variance with such an assertion. Any person visiting Covent Garden or the Borough markets during the fruit season, and indeed any other large market in the southern or midland counties of England, will find specimens of fruit as perfect and as fine as any which have been either figured or described by any writer whatever, either in this or any other country." The Virgalieu pear, (White Doyenne,) which, in the neighborhood of Boston, is considered as deteriorated, so as to be not worth cultivating, is, in Western New York, one of the finest and most delicious fruits, and shows no symptoms of decay. Coxe, though adopting this erroneous opinion, gives faithfully the following *facts* in opposition to his own theory. "The Styre apple of Hereford, in England, is supposed to have long since passed the zenith of its perfection, and to be rapidly declining there; yet in the growth and vigor of at least one hundred of these trees planted in my orchard, there appears to be no deficiency; on the contrary, they attract the notice of all who

see them, for the extraordinary luxuriance as well as beauty of their growth." Again, "The climate of America is supposed to have revived the Red-streak, which had deteriorated in its native soil from the long duration of the variety." Old age is *incurable*, therefore the decline of those fruits must be referred to other causes. One of these is clearly pointed out in the following extract from Lindley. The English Codlin, which he notices "with the view of directing the attention of the orchardist to it as an old and valued apple," is thus spoken of:—"The customary method, for at least one hundred and fifty years, has been to raise the trees from suckers and truncheons, as they are called; and in every old garden where they are found, they are diminutive, ill-formed, unproductive, and full of disease, incrusted, as it were, root and branch, with the greatest of all pests, the *aphis lanigera*, in consequence of which its fruit exhibits scarcely any of its original character. Healthy, robust, and substantial trees, are only to be obtained by grafting on stocks of the real Crab; they then grow freely, erect, and form very handsome heads, yielding fruit as superior to those of our old orchards, as the old and at present deteriorated Codlin is to the Crab itself."

The comparatively short life of the peach tree is well known; yet some of our finest varieties are known to be centuries old, and to show no symptoms of decline. In addition to this, there are many of the apple and pear, now cultivated as fine, which have been known from time immemorial.

We have noticed this error, because when adopted it tends to lead to erroneous practices. It was this which induced President Knight to estimate grafted trees unworthy of his care, unless the original seedling was known to be in a healthy condition, and it has led others in this country to ascribe to this supposed debility of old age, the diseases known as *fire-blight* in pear trees, and the *yellows* in the peach trees.

Before concluding our remarks on this volume, it is proper that we should take some notice of the treatise on the *culture* of fruits, which occupies 32 pages, and which was written by John M. Ives. This contains much useful and judicious matter, and some defects. Among the important facts, we notice the following:

"We are of opinion, from the use which we have made of the sea marl or muscle bed, that it is on the whole the best manure, either for top dressing or shallow ploughing, of any substance in use among us, particularly when applied to light soils."—p. 14.

This, of course, is precisely similar in nature and operation to old or slacked lime and to the marl beds of our swamps and marshes. As fruit trees are subject to the same laws of growth as field crops, and are equally benefitted by a fertile soil, the use of lime in their cultivation is a subject of importance, and should receive more practical attention.

The remarks on transplanting contain some excellent hints and cautions:

"In the removal of trees, care is necessary to obtain as much of the roots as possible, and in re-setting, that none are doubled back and distorted. Cutting off *smoothly* the end of each root that may be [have been] broken or cut by the spade, is indispensible, and all fibrous roots that are injured should also be cut *close* to the root upon which they are attached; the root or stem should be pressed close down to the soil, so as to place the roots in a horizontal direction, and all of them drawn out straight like a fan, or rays verging from a centre to a semicircle, and the soil thrown evenly over; the tree should not be shaken after the earth is placed upon the roots, as is too generally practiced; for when a tree is thus raised up, the small roots or fibres will be drawn out of their places, and when the stem is thrust down again, the roots being too weak to force their way back into the soil, will be doubled up, which often causes knobs, and throws out suckers; neither will the earth require to be trodden down *hard*, but gently; or if it be a dry or loose loamy soil, setting in *puddle*, which is to water as you set it; — this last method is undoubtedly the best, when an individual has time to attend to it, — it is a slower process. Copious watering *after a tree is set*, is often very prejudicial, by washing the soil from the roots."—p. 18.

The following explanation of the cause of sterility and of fruitfulness in young pear trees, will probably be new to some of our readers:

"Pear trees bear their fruit on short buds or spurs of one, two, three or more years' growth, from the strongest branches; and the same spurs will continue to produce fruit for a great length of time; but they do not often produce fruit until they have a surface of branches very large in proportion to the sap supplied by the roots. Thus we find that when pear trees are planted in a deep, rich soil, they grow rapidly, and therefore require a number of years to bring them to a bearing state; on the contrary, when growing in a light

or dry, shallow soil, they collect but a small quantity of sap, and require but a confined surface which is produced in a short time, and they are consequently brought to a bearing state in a few years."—p. 19.

Grafting the pear upon the quince, which is adopted for obtaining dwarfs, has been found very advantageous in promoting fruitfulness, in causing early bearing, and also in producing larger and finer fruit in some varieties. A great objection has, however, been found in the depredations of the borer which so frequently destroys the quince, but rarely, if ever the pear. To remedy this, pear stocks have been first grafted with the quince, and these again with the pear, thus inserting a portion of quince wood into the trunk of the pear, which produces the same result as before. But the following method we consider as a superior one:

"The quince stock should be budded *at* or *below* the surface of the ground, when the bark will separate *entirely* from the wood, which in this latitude take place about the last of July or early in August."

"The following spring, when the bud commences pushing, cut the stock off to *within three inches* of the bud, and in the next season finish or cut off the snag smoothly to the bud or shoot. In the third season, when the trees are removed to the situation in which they are to remain for fruiting, be careful to re-set them at least *one inch below the insertion of the bud.*"—pp. 28, 29.

The celebrated new European pear, the *Duchess d'Anguoleme*, which is cultivated and highly recommended by nursery men in this country, it is stated, "when grown as a dwarf, produces a fine, large fruit, but small and greatly inferior when grown upon a standard." This fact, which is doubtles applicable to other varieties, should be known to cultivators.

The following mode of checking the luxuriance of fruit trees to cause fruitfulness, is worthy of trial:

"If trees are found to grow too luxuriantly, and to form only wood for years, even after they are of sufficient size and age for the production of fruit, the earth should be removed, just before the frost sets in, and a proportion of the deepest growing roots cut off." —p. 20

Among what we notice with less approbation, are the following: The writer is opposed to winter pruning, and recommends the season when the buds are swelling and the sap is in vigorous motion.

At this season, however, the sap flows copiously from the wound and injures the tree. The objection, that when pruned in autumn or winter, the wounds are apt to crack, is at once obviated by the application, which should be made in all cases of the removal of branches of any size, of a composition of tar and brick dust, or a similar substance. For budding, we are told that the best buds are those on the middle of the shoot, not those at the lower end. However true this may be in case of other fruit, it is far from being the fact as it regards peaches. We are also directed in removing the bud from the shoot, to cut nearly half way into the wood, which is generally much too deep. Neither have we found any advantage in removing the wood from the bud, which is recommended in the work; on the contrary it has been found more difficult to insert such buds properly, and a needless labor. The season of budding, it is stated, is from the beginning of July to the middle of August. With peach, apple, and pear stocks we often succeeded nearly a month later, when they have been in a thrifty state. The direction would have been of more value had the writer pointed out the essential requisites for successful budding, and the causes of failure, giving the rationale of the adhesion of the bud. After giving more than half a page of directions for the operation, he has omitted to mention the ligature, which is quite essential. He recommends *cutting out* the *borer*; this will do where this insect has not entered far; but when it has penetrated deeply, *cutting* out would be to destroy the tree, and the only remedy in this case is to extract it by means of a friable barbed wire. No remedy is given for the depredations of the Curculio, that insect being merely alluded to. But we do not wish to dwell at too much length on these defects.

There is one thing, however, in this short treatise, which we cannot pass over without noticing. That part which relates to the cultivation of the Strawberry, which is much fuller than that on any other fruit, is, with the exception of about *one fifth*, copied word for word, and even to the italicising, *from an original article on the same subject, published under the editorial head of this paper*, vol. 6, page 294, and is offered, without quotation or reference, as original matter. Until an explanation is given, this must be considered as a gross plagiarism.

In concluding these remarks, we wish once more to advert to the main part of the work, which is from the pen of Robert Manning. The errors in the names of the varieties of fruits, which have been

multiplied by the absurd practice of attempting to propagate them by seed, giving to these new varieties, thus obtained, the original name, and also by the almost universal custom of nurserymen in this country, in frequently, if not generally, propagating from unproved trees, and the desire for long catalogues, which have rendered it impossible to obtain genuine fruits with any degree of certainty or even probability, from many large establishments, call loudly for a thorough reformation in nursery nomenclature and the removal of these perplexities. The following extract from the work before us, is but a sample of the disappointments which frequently occur, and which, as Manning justly observes, "are inconceivable to any but a collector:" "The invoices of trees from France frequently furnish instances of unparalleled ignorance, or even fraud. We have received from what were considered the best establishments, large numbers yearly — on one occasion several hundred — all bearing new and high sounding names, and the greater part of which were suffered to arrive at maturity, but with very few exceptions, the fruit was entirely worthless."

Such establishments as that of Robert Manning would contribute greatly to the removal of these evils, and indeed are absolutely essential to maintaining correct nomenclature. A work properly prepared, and for which that establishment would furnish abundant materials, would be an invaluable acquisition to the cultivation of fruit in this country, and we cannot but indulge the hope that such a work will be undertaken. The preparation of such a work, it is true, would require much judgment, care and labor; instead of the meagreness, or colloquial looseness, which has too frequently characterized American publications on this subject, full and accurate descriptions, should be furnished, in which *common* or *variable* characters should be rejected, and *permanent* and *distinctive* points alone seized upon and employed. In preparing such descriptions, fruits of each variety should be examined under all different aspects of growth, and the influence of soils, seasons, and even of different climates, in producing variations in their appearance and flavor, should be strictly examined and recorded. Figures of the fruit would of course increase the expense of such a work, but if correctly executed, would add greatly to its value. Wood cuts or lithographic prints, of the outline merely, would be nearly as useful as colored engravings, and would be attended with comparatively trifling expense.

Art. III.—*Grape Culture.*

Dear Sir — In one of the late numbers of the Cultivator, Col. Spooner, of Hempstead, L. I., has furnished your readers with a detailed statement of the culture of the Isabella grape, and its conversion to wine. He justly remarks, that much is to be learned concerning the culture of the vine; to which I add, that its culture has proved, and will continue to be a most efficient aid to the temperance cause. Such considerations, therefore, must commend it to the attention of every philanthropist, and induce his aid in extending its culture.

The great enemy of the grape is the rose-bug, which appear when the vine is in blossom. The colonel remarks, "in a few days after their first appearance, thousands are seen carrying destruction through the vineyard." The best remedy he could devise, he adds, "is to go among the vines early in the morning, before the sun has warmed them into activity, and they are then easily destroyed. A few mornings spent in this way, will clear the vineyard, as they are a short lived enemy." The colonel is fortunate, if his destructive visitors leave him in a few mornings; with us, in Kings county, they protract their visit for *weeks*.

Rose-bugs, in my neighborhood, have, in some places, entirely destroyed the crop, both this and the last season; while my grapes, which were nearly surrounded with *rose bushes*, escaped their ravages. It has been the practice of many, to remove rose bushes to a distance from the grape vine, but without success. The cause is evident, they attract the bugs, but they serve also as a trap to secure them. The colonel's plan is doubtless the best *when practicable*. He would find it difficult to *catch bugs* on vines trained to a great height, as they generally are in villages, besides as they can only be caught when the morning dew is upon them, their extermination would require many mornings' labor, and in the mean time the blossom would suffer from their voracity. Col. Spooner's communication will, however, prove extremely valuable in villages and cities, by furnishing the mode of trimming the vine, to thousands who never would consult a regular treatise on the subject, but would suffer the impositions of gardeners, who, by making a great mystery

of the manner of trimming, contrive to extort large sums for a very trifling labor. And, en passant, I may add, that article alone is worth double the yearly price of the Cultivator. The colonel requests of your correspondents, information in regard to the culture of the vine, and inquires whether manuring is desirable? What kinds? and to what extent, &c. &c. His valuable article entitles him to any information on the subject your correspondents can afford; and I trust it will receive the attention it merits.

My experience has been too limited to afford full answers to his queries. With regard to manuring, however, there can be no doubt that ground cannot be *too rich* for the vine. What kind of manure is best adapted to the vine, requires the test of experience. I experimented upon three vines, a short distance from each other in like situations, and upon the same soil — a rich sandy loam. To one I applied *liberally*, unleached wood ashes, three or four times a season; to another, animal manure; and to the third vine, I applied liberally, long unfermented barn-yard manure.

The animal manure produced a luxuriant growth in the vine, and enlargement of the grapes, which exceeded any thing I ever witnessed in the Isabella vine, notwithstanding the severe drought this season. The vine "ashed," was also luxuriant, though not equal to the first vine, but more thrifty than the vine manured with barn-yard dung. I do not believe that the ashes are congenial to the vine in *all* soils, but in a sandy soil it certainly is. Animal manure, however, will answer in any soil, and I believe for any crop. To other vines I caused soap suds, &c. to be applied, which I have found of great service.

Few cultivators consider, that the roots of the vine extend along the surface of the ground as far as the vine extends above the surface, and consequently the vine receives its nourishment from a considerable extent of ground. I was requested, a few days since, to examine a vine, which appeared sickly, and upon which the grapes were withering, although not half grown. I was told that the vine had been well "manured." On examining I found that within two or three feet of the vine the ground had been made rich, but beyond that distance, the top soil had been removed, in levelling the ground, and of course the sterile subsoil alone left to nourish the vine. I need only add, that the owner understood the culture of flowers better than the vine.

My mite of information on this subject, is furnished with the hope that it may call forth the necessary information in relation to the culture of the vine. BROOKLYN.

N. B. Since writing the above, I have examined the vine to which I have applied animal manure, and find that it has several small bunches of grapes just formed, being a *second crop*. This, I presume, is owing to the extreme richness of the earth. — ***Albany Cultivator.***

ART. IV.—*Orange Groves of Florida.* By ALEXANDER GORDON.

THE following remarks are the result of observations made during an extensive and varied tour, (just terminated,) over an extent of several thousand miles, in prosecuting which I have seen much which I consider both instructive and interesting. For the present I purpose confining myself to a few brief observations on the state of the Orange groves, &c. at the city of St. Augustine, E. F.

You, of course, are aware, St. Augustine is one of the oldest, if not the very oldest city within the jurisdiction of the United States, and has long been a place of great resort for invalids afflicted by the pulmonary and bronchial complaints. I had visited this city in 1831, and I confess I was in perfect raptures with its diversified beauties, but particularly with its *Orange Groves.* It then appeared like a rustic village, the white houses peering from among groves of this delightful fruit which grew in the greatest luxuriance. The clustered boughs covered with their golden produce, yielding a rich harvest to the owners, and affording a delightful shade to the foreign invalid, when he cooled his fevered limbs and imbibed health from the perfumed atmosphere. While the ear was gratified and the feelings soothed by the various notes of that delightful songstress the Mocking bird, which found a ready shelter amid their verdant foliage. But, alas! on my visit the past spring, in vain did I look for those rural bowers, so gratifying to the eye and invigorating to the system. Not a single tree of any magnitude to indicate its former grandeur. The imagination could scarcely conceive such a perfect metamorphosis. For a long period of years, the Orange had flourished without interruption from frosts or other casualties. The city of St.

Augustine was peculiarly favorable for this semi-tropical fruit. The soil is naturally sandy, but rich in calcareous and vegetable deposits, consequently well adapted to the growth of the orange and other horticultural pursuits. When I was there in 1831 the Orange had become the staple commodity of the city's commerce, and subsequently to that time I understood several millions had annually been exported. Numerous groves of young trees were planted, and $10,000 had been refused for a grove consisting of only 2 or 3 acres. Extensive nurseries could scarcely supply the demand for young trees. A vast and lucrative field opened to the enterprising horticulturist. On the native orange were engrafted the choicest varieties of other climates with the most perfect success. Prospects of immense wealth seemed beyond a doubt, but

"There came a frost—a withering frost."

During the month of February 1835, East Florida was visited by a severe frost, much more severe than any before experienced. A cutting N. W. wind which blew ten days in succession, but more violent for about three days. During this period the mercury sank 7 degress below zero. The St. John's river was frozen several rods from the shore and afforded the astonished inhabitants a spectacle as new as it was distressing. The Orange, the Fig, and all kinds of fruit trees were killed to the ground; many of them were completely annihilated; but a considerable number have started again from the roots. The wild groves in Florida suffered equally with those cultivated, at all events as far south as Lake George, and the inhabitants were thus deprived at one fell swoop of their only resource. But on my visit, in the month of April last, I was happy to find the inhabitants were not totally discouraged, for there are many thousand of young trees now ready for planting out, and in a few years more it is to be hoped, St. Augustine will again exhibit its wonted appearance. The oranges grown here were considered decidedly superior to those imported from the West Indies, and as so long a period has elapsed since they experienced so calamitous a visitation, (I believe not since 1775—6,) it certainly is worth while to persevere.

The Mulberry.—Independent of the Orange there is another field open for the enterprising, probably equally, if not more lucrative. I allude to the cultivation of the Mulberry. This has been

attempted and even carried to considerable extent, so much so, that in one instance an individual bought a lot of ground for which he paid $800 and planted it with the Morus multicaulis. At the expiration of two years he sold the lot for $1,600, having sold as many plants in the interim as cleared his lot and all attendant expenses. The climate and soil in this section of America is peculiarly congenial to the cultivation of the Morus multicaulis and the rearing of the silk worm. I saw a considerable portion of the Morus multicaulis in several gardens; but for several years the ravages committed by the rapacious Seminoles have paralyzed every effort and completely prostrated the improvements carrying on and in contemplation.

At a former period St. Augustine could boast of a very extensive Botanic Garden. It was enclosed by a formidable stone wall, and, I believe, established by Governor White. This place now serves for the *pen of a herd of swine*, which, with the exception of a few ancient fruit trees, appear the only tenants of a spot once devoted to the choicest gifts of Flora.

ART. V.—*A Flora of North America; containing abridged descriptions of all the known indigenous and naturalized plants, growing north of Mexico; arranged according to the Natural System;* By JOHN TORREY and ASA GRAY.

HERE is the first number and earnest of a work, which has been long and anxiously desired by the botanists of the United States; and which will, doubtless, be cordially greeted by the cultivators of botanical science, throughout the world. The plants of North America have always been regarded with a lively interest. They have at various times, attracted hither a number of botanists from the old world, who have reaped a rich harvest of discovery in our forests, on our mountains and prairies, and along the margins of our almost interminable rivers. A few of our own countrymen have also rendered important aid in making known the character and extent of our vegetable treasures. Their labors, however, have been for the most part, restricted to the production of *partial* or *local*

Floras, highly interesting, indeed, so far as they extended, and furnishing valuable materials for a more comprehensive work; but still they were severally limited in their scope, and of necessity, incomplete in their contents. The materials thus existing in detached masses, and scattered through numerous volumes, awaited the plastic operation of some master hand, to reduce them into one consistent body, and give to all the parts their appropriate "form and pressure." It was exceedingly important, that whoever might undertake to prepare a North American Flora, should be thoroughly acquainted with the labors of preceding botanists; and by consulting their collections, as far as practicable, be competent to detect their errors, adjust their discrepancies, and determine their various synonyms. We consider it, therefore, a subject of felicitation, that the work has fallen into the present hands, as being confessedly those among the best qualified for the task, in our country; and we rely with confidence upon their receiving the zealous cooperation and encouragement of every lover of the Science of Plants. We cannot for a moment doubt, that every American botanist will eagerly avail himself of the occasion to possess a complete Flora of our widely extended continent; and we should fondly hope, that every liberal cultivator of science in our land, would be happy in the opportunity to patronize so commendable an effort to enhance the national reputation.

The authors of this Flora have, of course, adopted the *natural system*, as being the only one consistent with a truly scientific arrangement of plants; and they have availed themselves of the latest discoveries, in order to exhibit the details according to the most approved method, in the present state of the science.

By issuing this work in parts, or numbers, some advantages will be secured, which would otherwise be unattainable. The *natural families* being complete, even in those detached numbers, the botanists in various parts of our country will have leisure to examine and verify the particulars of each, during the course of the publication and thus may suggest, in due time for an *Appendix*, (which must ever accompany works on a progressive science,) such corrections, modifications, or additions, as their opportunities or discoveries shall enable them to make. In this way, much valuable aid may be furnished to the authors, and the Flora rendered more perfect and comprehensive, without occasioning any material delay in its final completion.

The characters of the orders, tribes, and genera, are well defined; and the specific descriptions, though abridged, are sufficiently full to be clear and satisfactory. They are, moreover, frequently accompanied with notes and detailed remarks, (especially the less known, or newly discovered species,) which seem to supply all the information that can reasonably be desired, in the Flora of so extensive a region.

The additions derived from the recent discoveries of Mr. Nuttall, during his journey to the western coast of this continent, are highly important; and are here published, for the first time, from the original manuscript, furnished by that distinguished and indefatigable naturalist.

It appears, by a notice affixed to the number just published, that the work will be issued in nine parts, three parts to make a volume, and the whole forming three closely printed octavos, of about 550 pages each. The succeeding numbers will appear with as much dispatch as is consistent with their faithful execution.

Such being the character and plan of the forthcoming *Flora of North America*, we conclude our brief and hasty notice with a reiterated expression of the hope, that the worthy and accomplished authors may be adequately encouraged to persevere in their most laudable undertaking, and thereby be enabled to bring it to a successful and speedy completion.—*American Journal of Science and Arts.*

Art. VI.—*New England Aster. Aster Novæ Anglæ.*

To the Editor of the Boston Medical and Surgical Journal.

Dear Sir,—About forty years ago Dr Baldwin, of West Stockbridge, who was esteemed by Dr Sergeant, sen., as a very judicious physician, had the care of Mr Barnes's son, say 10 years old, with an affection of the herpetic kind, a painful, tedious case, called salt rheum, on one leg from the knee quite down on to his foot. Many things had been used, and a mercurial course, without relief, and the doctor was ready to despair of curing the boy. While dressing his leg, one day, an Indian woman passing the house, called and on

seeing the leg, says, *I think I can give you herb will cure that boy.* What herb? says the doctor. She says, *I call 'em Indian scabious*; a strong decoction of the herb made and applied by washing the sores twice a day, and laying over a cerate plaster, and drinking of a tea of this herb several times daily. It appeared to be beneficial in a few days, and the cure was effectual. The doctor made a fair trial of the medicine. I was induced to seek for a name and add it to my list of articles for eruptive disorders. We then had a man here very useful in diseases of beasts, who had a name for many vegetables, and his name for it was beeweed (and now known by that name,) because it flowered late (the middle of September,) and continued to blossom, one stalk after another, generally till the frost destroyed it, so that it was an autumnal feast for the bees. I have considered it a species of aster, and as there are a host of herbs of that name, I have long wished to have it particularized. A few days since I spent half an hour with Professor Chester Dewey, now of Rochester, who is delivering lectures now to the students in Pittsfield. He assured me that it was the New England Aster, Aster Novæ Anglæ, and had no other name—so beautiful and fragrant it might adorn a flower garden in the fall.

He also told me that the article I had so long called cow-parsnip was in Eaton's Botany called Smyrnium aureum, afterwards sison aureum, and finally zizia aurea by a French botanist. I asked for the English of zizia. He said he did not know that in French it meant anything more than simply an herb. So that it appears that the old hysterical herb imperatoria, masterwort, must claim the name of cow-parsnip, and Bartlett's epileptic remedy must be called by the name of zizia aurea, the golden herb. But it may be a long time before it loses its name of spondylium, cow-parsnip, with the inhabitants of the counties of Hampshire and Berkshire, or of Connecticut, having retained it, probably, wo centuries. Excuse the digression.

Some years since, say thirty, visting a friend fifty miles from home on riding out one day we passed a large growth of asters in full bloom, so beautiful and of such a flavor he observed, "I should think that this might be medicinal." I replied, it is useful for the salt rheum, but not a sure remedy. He instantly dismounted, saying, *there is a young woman in our neighborhood, who has sat six successive winters with folded arms, plastered and almost useless, and*

can do very little after the frost comes, and begins now to complain. She shall try it. My said friend some years after told me that said young woman was so relieved by washing and drinking, as the said Indian woman directed, that in a few weeks she was able to do her necessary work, and persevered using it so that she was cured and had nothing of the complaint any more. The two cases related are the only ones I have known where the aster alone was used. It has been useful in many instances in mitigating the complaint, and probably curing some others. This aster is with us yet in full bloom. It is probably described in some Botany, but not in Eaton's. A tea made from barley malt, sarsaparilla and this aster (the tops and flowers,) and so bittered with fumitory as to resemble beer in some measure, I consider a useful drink while curing eruptive disorders. My circumstantial relation of cases may be accepted as an acknowledgment of obligation to the despised Indians.

I consider the name of an article of but little consequence, unless it is of use to me as a medicine. I now have the botanical name of an herb, given by an Indian to good effect in a case of nephritis, which I have long esteemed but never saw yet in any dispensatory, though known to many. If not prevented, I may probably give the account of its use by the Indians, and of its good effects in several cases.

Excuse haste and errors. I should have wrote some days sooner had not avocations prevented. Your friend,

Stockbridge, Ms., 22d Sept., 1838. O. PARTRIDGE.

REMARKS BY THE CONDUCTOR.—We were not aware that the Aster Novæ Anglæ possessed medicinal properties described above We have long known it as a showy plant for the garden, and have cultivated it as such for these 10 years, and often wondered why it has never been more noticed as an ornamental plant. The genus Aster embraces ninety species enumerated by Eaton, and probably many more are yet to be added to the number. Many of the specie, are very handsome, and would appear well in the flower borders where they will make a fine display in the autumnal months. Aster Novæ Anglæ is a tall plant, 3 or 4 feet high with a brown hairy stem, and numerous linear lanceolate, entire, acute leaves, continued at base into a pair of small, rounded lobes clasping the stem. The flowers are large, crowded on the top of the stem, with long, deep purple rays and yellow disk.

We will name a few other species which we have also cultivated with much pleasure, and can recommend them to the attention of the lovers of American plants. Why should we not love our own flowers? Why not collect them from the fields, meadows and woods, and decorate our gardens instead of bestowing all our attention upon exotics, many of them, far their inferiors?

A. multiflora, a very fine plant producing beautiful wreaths, crowded with thousands of small flowers with white rays, and yellow disks,—with smoothish linear leaves, of a deep glossy green. Stems very branching and diffuse, branchlets all one way. Aster diffusus is another pretty variety with a profusion of small white flowers with a brownish disk. Aster cyaneus, is one of the most common and beautiful species, with fine purplish blue flowers, and when cultivated grows 3 feet high. The different species in the wild state do not generally throw up more than one, two, or three flower stems, but when introduced into the garden soon form large masses, and when most other flowers have faded these will regale the sight until the heavy frosts of November. A. puniceus, A. cordifolius, A. corymbosus, A. lævis, A. diversifolius and a number of other species are worthy of cultivation and have been under our care in times past. Add to these some of the finest of the numerous species of our Solidagos, and we shall make quite an addition to our ornamental autumnal plants.

Probably many of the species so called by Eaton, may be only varieties. It is one of the most puzzling as well as interesting family of plants to the botanist, (especially to a young one,) which exists in our country, and he will be often perplexed to identify the species.

Art. VII.—*Profit of Fruit Trees.*

The profit which might be derived from the cultivation of fruit, it is believed is more neglected than almost any other crop of equal importance. The supply of markets might be safely relied on as a source of income, by those who live in the vicinity of our towns and larger villages. Predictions of ill success will of course be

repeated by those who see failure in everything, but the scantiness of good fruit in market, and especially of the early varieties, is well known; and our first rate kinds can scarcely be obtained in any quantity. These, when once procured, may be as easily cultivated as the worst, and the demand for them would be certain. In our cities, where alone such can be had in market, the prices of the finest kinds, instead of diminishing, have rather advanced. In proof of the demand for such, a case may be mentioned on the authority of William Kenrick, who states that a single tree of Prince's Imperial Gage Plum, owned by Samuel R. Johnston, of Charlestown, Mass., *has for several successive years*, yielded crops which were sold at from *forty to fifty dollars per annum*. This, it is true, is a fine and uncommonly productive variety, but it will grow in New York as well as in Massachusetts. If finer fruit is demanded than formerly and the public taste is growing fastidious, cultivators may very easily outstrip this growth by directing their attention to the best kinds.

To those who do not live in the vicinity of towns, and who are consequently deprived of a ready market for early fruit, there is another channel for profit opened, not less important. This is the cultivation of fruit, chiefly apples, for feeding farm stock. It has already received considerable attention, and the value of this kind of food and its superiority to potatoes, fully determined. But its *cheapness* is not perhaps generally appreciated. A great advantage in raising this crop, is the little labor in cultivation which is required, after the orchard has attained bearing size. The crop may be said to come without labor, nothing more being needed than to gather it, and this is in fact less laborious than the gathering of almost any other. The actual cost per bushel may be ascertained with tolerable accuracy by an estimate. We will first determine the expense of an acre of orchard. Land well adapted to this purpose may be had for forty dollars an acre: and the number of trees to the acre may be one hundred, if the variety is the Bough or Tallman Sweeting, which are of smaller growth than usual. The price of a hundred trees, if purchased by the quantity, would not be more than fifteen dollars. A laborer would dig the holes and plant ten in a day,* so that the planting, at a dollar a day, would

*It is of course taken for granted that the holes in this case are large—several feet across; and not so small as are usually dug; or barely sufficient to admit the roots,

cost ten dollars. No further care would be needed until the trees should arrive at a full bearing state, but cultivation, which of course would produce sufficient crop to pay the rent of the land during that time. An orchard then in a good bearing condition would cost as follows:

Cost of Land,	$40
" " Trees,	15
" " Planting,	10
	$65

The orchard would subsequently produce more if kept generally cultivated; the crop obtained from the soil would pay the cost of the work. The quantity of fruit would of course vary; but a very intelligent farmer, whom experience enables to judge, thinks that an orchard of the Tallman Sweeting would produce on an average, ten bushels per tree yearly. He frequently obtains much more, often double, and sometimes triple that quantity. The product of an acre would thus be a thousand bushels; the cost would be the interest on the land, or about four dollars and fifty cents, which would furnish the apples on the tree at about *half a cent per bushel.* This is better than raising potatoes, and would save much tedious planting, hard hoeing and laborious digging.

Apples ripening in summer would be of great value, as it is quite important in fattening animals, to commence early. The common Sweet Bough would be one of the best at that season, as it produces good, and uniform crops. The Summer Rose, a sweet apple of excellent flavor, which ripens about the same time, is according to Manning, "a great bearer," and would consequently be very valuable. The Tallman Sweeting would certainly be one of the very best for late fall and winter use, as it is a fruit of uncommon richness and uniform productiveness, commonly bearing abundantly every year. But other varieties, particularly adapted to this purpose, are a desideratum.—*Genesee Farmer.*

which cannot readily penetrate the hard subsoil surrounding the hole, and are thus limited in growth, to the great injury of the tree.

Art. VIII.—*Modes and Profits of Strawberry Culture*; By Tunis G. Bergen, Narrows, L. I.

Mr Buel—Having noticed an article in your August number, on the cultivation of strawberries, to which my attention has been directed for a number of years, and wishing that the public should receive all the light upon the subject which can be diffused, induces me to communicate what little knowledge I possess of the matter. The kind generally cultivated on Long Island (where I reside) for the supply of the New York market, I believe to be the early scarlet, and of these I have at present about three acres under cultivation. We generally transplant, and form our new beds in the beginning of May. Formerly the universal practice was, to transplant in rows from two to two and a half feet apart, the plants single from one to one and a half feet from each other in the rows. My present practice, and that of many others, is to plant them in hills, about three and a half or four feet asunder each way, placing four plants in a hill, two and two together, about three inches apart. By planting in hills there is a great saving of labor, for it takes less time in transplanting, they are more easily kept clean by running the cultivator through them both ways, and there is less labor in hoeing; whereas, by the old method, when planted close, the cultivator could not be used in them at all, or at most only one way. The cultivator is run through them as late as it can be done without serious injury to the runners, hoeing them each time, and it is seldom, when it is judiciously done, they require it over three times. I have always, in my practice, found them when properly managed, to cover the ground with a sufficient number of plants to produce a good crop of fruit the next season. A piece covering less than half an acre, of last year's planting, produced this season over 3000 baskets, containing nearly a pint each, which were sold in the New York markets for $200. This, however, is an uncommon yield, and is seldom equalled or excelled. New beds almost invariably yield better than old ones, and produce larger fruit, although apt to be sandy after showers. It took nearly two acres of my old beds to yield the same quantity the half acre of new did. The soil I prefer for strawberries, is light sandy land newly cleared, on which no ani-

mal or vegetable manure has been used. On land of this kind, which has been prepared by previous crops, and on which weeds have not been suffered to go to seed and take possession, they will last four or five years, while on old land they are seldom profitable over two, and often but one.

The greatest enemy to the beds is white clover, which, in old lands, after the first year's bearing, generally gets possession of the beds and eradicates the plants. Land lately cleared is not often troubled with this grass; the great danger is from sorrel, but this is less destructive. 'Our beds cover the whole ground; there are no alleys, no clipping of runners, no digging the paths, no burning with straw, as recommended by some gardeners, for it is doubtful whether these operations would answer our purpose; whether they would be profitable and pay cost. At all events, our experience leads us to adopt the plan I have described. The only attention which I have found necessary and advantageous, after the first year, is to pull up and destroy the weeds and grass, and to run a light harrow over old beds, early in the spring, when matted too thick with plants. As for manure, it is not customary for us to put any on. I once read an account of plaster being highly beneficial, which I tried, but it failed in improving them. Lime might aid in destroying sorrel, but have not tried its virtue.

Much has been written about male and female plants, and of the necessity of mixing them in the beds to make them fruitful. Now all this may be necessary with some varieties, but with the one we cultivate I can assure you it is not; no cultivator in my neighborhood from which the New York markets are principally supplied, that I have ever heard of, does it. I once tried an experiment which appears to be conclusive. I planted a small bed in my garden at the time when the fruit commenced ripening, taking only such plants as had good and fair fruit on them, and no others. This bed produced the next year abundantly; they were all female plants, and no males in their vicinity to impregnate them. The male and female blossoms of this variety must be on the same plant, although to the eye no difference is presented in their appearance.

If you deem these remarks worthy of notice, you may insert them in your valuable journal; and if you desire it, I may at some future period describe the manner in which cucumbers, melons, &c., are cultivated among us for the supply of the New York markets.—*N. Y. Cultivator.*

Art. IX. — *Massachusetts Horticultural Society's Annual Meeting.*

[Concluded from page 400.]

EXHIBITION OF FRUITS.

From Messrs S. & G. Hyde of Newton, a large collection of fine fruit of varieties as follows.

Pears. — Forelle, Seckel, Coffin's Virgalieu, Urbaniste, Tucker's Bon Chretien.

Apples. — Doctor Sweeting, Winter Pumpkin Sweeting, Fall Sopsavine, Pound apple, Hubbardston Nonsuch, Greening from South Reading, Dutch Codlin, Flanders Pippin, Gravenstein, Smith's Gilliflower, Berlin apple, Ben apple, Pæony apple, Vandevere, July flower, Bough Harvest, Feurler Sapsons, Coggswell, Grand Sachem, Red Calville, Washington Pearmain, Lyscom, High Top Sweeting, Scalloped Gilliflower. This last, with many others, were very beautiful.

Also *Watermelons*, of extraordinary size, one weighing 39 3-4 lbs. and one 44 3-4 lbs.

From Mr Philip P. Spaulding of Chelmsford.

Apples. — A seedling Green apple, and another seedling fruit, also a new French fruit called Mons le Cure, and another, De Marseilles, a noble, large, red fruit of fine flavor.

From Mr Ives, from his garden in Dearborn street, Salem.

Pears. — Beurre Capiaumont of Van Mons, Frederic of Wurtemberg, Raymond, Beurre Bosc, Andrews, Bleecker's Meadow, Bourgomestre of Boston, Napoleon, St. Germain Panache or Striped St. Germain, a new and curious striped fruit, similar in form to St. Germain, but the specimens were not quite so large. Passe Colmar, Cushing, Lewis, and a new Flemish variety, name lost.

Apples. — Pickman, Swaar, Michael Henry Pippin, Mela Carla, but not that kind which has been so lately received from the London Horticultural Society ; Wellington, Rambo or Romanite, Carhouse or Gilpin, Bullocks Pippin.

From Mr Manning, from his garden, Dearborn street, Salem, the following specimens, many of them new and rare and such as have never yet been produced in this country.

Pears. — Andrews, Green Catharine of Coxe, Jackman's Melting, large and handsome, Autumn superb, Bell Lucrative, Belle et Bonne, Beurre Diel, Easter Beurre, Brown Beurre, large and handsome, from Standard Tree, Bezi Montigny, Bishop's Thumb, Bleeckers Meadow, Bon Chretien Fondante, Williams' Bon Chretien, Spanish Bon Chretien, Fondante d'Brest, Catillac, Cumberland, Cushing, Doyenne Gris, D'Angouleme, Glout Morceau, Green Sugar, Hason's Incomparable, Harvard, Henry Quatre, Jalousie, Johonnot, Lewis, Marie Louise, Messin, Jean, Long Green of Coxe, Long Green of Autumn, of new edition of Duhamel, Naumkeag, Newtown Vergaleau, Winter Orange, Passe Colmar, Pope's Quaker, Prince St. Germain, Rousselette de Rheims, Roussellette Panache, new Winter Royal, St. Ghislain, Sieulle, Stevens' Genesee, new, Styrian, Surpass St. Germain, Swan's Egg of Coxe, Egg Pear of Duhamel, Urbaniste, Washington, Beurre Bollwiller, Beurre Comte du Fresnel, Beurre Duval, Hooper's Bilboa, large and beautiful, new, Figue de Naples, Frederic of Prussia, Fulton, Garnstone, Green Pear of Yair, Josephine, Jamenette, Austrasia, Sabine of the French, Louise Bonne of Jersey, fine, large, great bearer, new, Roi de Wurtemberg, Present Royal of Naples, Reine des Poires, Surpass Vergouleuse, Beurre Van Marum, Webber's Yellow Autumnal, Alpha, Brugmansbirne, English Autumn Bergamotte, French Autumn Bergamotte, Bezi de Chaumontelle, Crassane, Knight's seedling, Coffin's Vergouleuse, Petre, very superior, great bearer, striped Long Green, Wilkinson, Ronville, Cassolette, Summer Thorn of Thoulouse, Doyenne Blanc — 84.

Apples — Cambuthnethan Pippin, Crowninshield Sweet, new seedling, fine, two sorts new seedling Crabs, Rambour d'ete, Orttley Pippin, Ribstone Pippin, Fall Harvey, Swaar, Yellow Bellflower, Blue Pearmain, Murphy, new, fine, large, Putnam's Harvey. — 13.

From Mr J. Clapp, South Reading; 3 fine Melons, beautiful Peaches, Siberian Crabs and Lady Apples, York Russet, basket containing Apples, Grapes and Peaches, Platt's Burgamotte.

From Jacob Dean, Mansfield, Mass.; Pine apple Peaches, Hay Boy, Golden Sweet, Golden Russet, Apples, large Early Peaches.

From Thomas Banks, Roxbury; seedling Pear, Beurre de Roi, Andrews, Burgomaster, St. Michael's, Hunt's Connecticut Pears, and Red Calville Apples.

From John A. Kenrick, Newton; Pumpkin Sweet Apples, Kenrick's Heath Peaches, and fine Orange Quinces.

From Dr Howard, Cambridge; 2 baskets containing variety of Pears, Apples, Nectarines, &c.

Large basket of Sweetwater Grapes, raised in the open ground by William Oliver, Esq.

For the Committee,

WILLIAM KENRICK, *Chairman.*

September 28, 1838.

EXHIBITION OF VEGETABLES.

From Samuel Prescott, Elm Hill, Roxbury, six large crook neck Squashes.

From John Hovey, Roxbury, Tomatoes.

From Mrs Welles, a Squash, (6 feet 4 inches in circumference, weight 88 lbs.) from seed received from Paris.

From T. Thompson, Jr. an African Acorn Squash.

From J. D. W. Williams, Roxbury, Elm Hill, two Drumhead Cabbages, and two Squashes, weighing 24 lbs.

From Richard Ward, Roxbury, extra fine Lima Beans.

From J. Clapp, South Reading, a crook neck Squash.

From Samuel Pond, Cambridgeport, Pine Apple Potatoes, and Acorn, Autumnal and one other variety of Squash (name unknown.)

From Hon. John Lowell, Roxbury, Love Apples, (Tomatoes), and Sweet Potatoes.

From James Eustes, South Reading, a Chili Squash, (wt. 62 lbs.)

From Jonathan Warren, Weston, a large Potato.

From J. L. Moffatt, Esq. Roxbury, Yellow Tomatoes, and an Autumnal Marrow Squash.

From John M. Ives, Salem, a Smyrna, or Palermo Squash. A prolific variety, and runs very little.

From Samuel Hyde, Newton, Mangel Wurtzel.

From Rufus Howe, Dorchester, three Valparaiso or Lima Squashes, and one African Blue Skin Squash.

From Mrs Timothy Bigelow, of Medford, a Seven Years' Pumpkin, weighing 46 lbs.; it was in perfect condition, and it is said will remain sound for seven years. It was raised in 1837, and exhibited at the annual exhibition of that year.

From Abbott Lawrence, Jr. Park Street, an Autumnal Marrow Squash.

From Perez Smith, Weston, a Canada crook neck Squash, a *trim specimen*, and curious.

From E. Sparhawk, Brighton, a crook neck Squash, (wt. 46 lbs.)

From Capt. Geo. Lee, West Cambridge, a Squash, of mammoth size, weighing 130 lbs.; 2 Seven Years' Pumpkins, weighing 81 lbs.; 2 baskets Tomatoes, and 1 basket Horticultural Beans.

From James L. L. F. Warren, Brighton, Cuba Love Apples.

SAMUEL POND, *Chairman.*

Art. X.—*Blight in Pear Trees, and Remarks on Plums.*

Joseph Breck, Esq.—Sir, I have taken the N. E. Farmer for the last eight years, the Albany Cultivator from its commencement, and frequently see the Genesee Farmer and other agricultural papers and have read all the various articles on the fire blight. From my own experience I am satisfied that not one of the various writers knows anything about it. When our medical men shall discover the cause and cure for the Asiatic cholera, then and not till then, I fear, will our horticulturists learn the cause and cure of the blight. I have whittled many limbs into fine shavings, dug up a number of trees, examined the roots and shavings as closely as possible with a good glass and am fully satisfied that it is not caused by any insect. One of my trees in the fall of 1837 produced 10 bushels of pears; this season blossomed full; soon after the fruit was formed, was attacked on the body about four feet from the ground; a strip around the body of the tree about 10 or 12 inches wide was entirely killed in three or four days, whilst every limb was vigorous and healthy. The bark of the body of the tree was coarse and rough. Could that have been done by an insect? I had 50 trees, 25 of which were killed from the seedlings of two years up to those of 30 years standing. I had the Easter Beurre, Bartlett, Passe Colmar, St. Michael, Seckle, down to the most worthless seedling. The disease pays no attention to age, location or quality of fruit. My soil is a sandy loam; a number of the trees stood in the kitchen garden

and have been cultivated for 25 years ; others stood in the fruit garden, which has been in sward for a number of years. One tree stands within a few feet of a spring strongly impregnated with iron, and the soil in the immediate neighborhood contains iron ore which I should suppose would answer as well as to hang old iron on the limbs of the tree. A Seckle pear tree had 40 or 50 pears of a very large size ; ripened well ; about two weeks before they were ripe, the tree was attacked within two feet of the ground, although the tree was apparently healthy and vigorous above the wound ; the flavor of the fruit was strongly affected by it. Could this have been caused by the effect of the sun upon unripened wood ?. The disease has been known in this section of country about six years ; it, commenced on my trees this season about the 20th of May, when the trees were in full blossom and continued till the first of September. The months of April and May were remarkably cold and wet, the summer hot and dry. The apple trees and the quince are affected by the disease, but not to the extent of the pear.

As to some experiments that I made on plums (see New England Farmer, vol. 15, No. 31,) not one of them answered any good purpose.

Doct. J. P. Kirtland, a gentleman who has had probably more experience than any other man west of the Alleghany mountains, says, (in a report to the legislature of Ohio) he knows from experience that hogs, whenever they can have ready access to the tree to eat the premature falling fruit, and root and rub around the tree, is an effectual remedy. A gentleman at my house a few months since, says that he has a plum orchard, which for a number of years used to be loaded with fruit ; the plums commenced falling soon after they were formed and continued to fall during the whole season, so that scarce any ever ripened. Ten years ago he converted it into a hogpen, and since has never failed to have plums in abundance.

If any gentleman will call at my house in Euclid and examine my pear trees, and is not fully convinced that the disease is an epidemic, I will give him a plain farmer's dinner.

Respectfully yours, &c.

Euclid, Nov. 4, 1838. M. L.

Art. XI.—*Miscellaneous Matters.*

Plantation of Fruit Trees. — About the year 1769 a stranger purchased a farm near the village of Bethincourt, ten miles from Verdun-sur-Meuse. This village is placed on a soil, having a base of calcareous salt, where fruit trees find great difficulty in flourishing. The most robust ones never arrive at any great size, and are soon covered with excrescences and moss. This particular farm, however, had an orchard, which was quite an object of admiration, for the extreme beauty of its trees, and the extraordinary quantity of fruit produced. A new proprietor, wishing to plant the piece of ground with fresh trees, caused the old ones to be taken up, and in doing so, there was found under each tree a piece of pavement, or else a large slab, about four feet square. This was placed there apparently to prevent the trees from sending down their roots perpendicularly, and to force them to spread out in a horizontal direction through the upper part of the soil, where the trees could obtain better nourishment than in the ground below. This practice was at the time unknown to the inhabitants of the country. Two proprietors determined to try it in their new plantations, and accordingly they each placed young trees over large flat stones. One of them, M. Perrin, in 1815, planted in this manner a large quantity of fruit trees of different sorts, which are now exceedingly productive, though to all appearance they have not by any means arrived at the full measure of their growth.

The Society of Horticulture, at Paris, has lately been written to on this practice, and an animated enquiry has been instituted into its merits and advantages. On the one side, it has been maintained that it is useless to place the flat stone under trees when the subsoil is inferior, because the tap-root is always cut, if one exists, and because the other roots quickly descend outside the stone, particularly where the soil is poor. Others declared that the side roots quickly take the place of the perpendicular root, which has been cut off, so that cutting off the tap-root is useless. On the other hand, it was stated that the roots never make an effort to pass over the stone, unless when the subsoil is excellent, and more suitable to their growth and nourishment than the ground above. One old member of the society related, that it was the custom, in his youth, to

put a tile under the root of trees when planted in poor land: and the secretary raised a question of an opposite nature, by stating the plan pursued in England, of putting gravel under the roots of fruit trees, when the ground was very rich, in order to moderate the vigor of the trees, and to render them more fruitful by hindering the roots from descending too far. Another member confirmed this view of the subject, by stating that he had known pear-trees to be constantly barren from too much vigor, arising from the excellence of the ground in which they were planted.

On this subject we have before us the opinion of M. Poiteau, one of the most experienced horticulturists in France, and we think we shall gratify our readers by making it public. "If," says he, "I consult my memory and my experience, I should say, that a fruit tree raised in a nursery never has the tap-root when planted out afterwards, either because it has been lost in the artificial mode of raising it, or because it is always cut off when taken from the nursery. My experience cannot point out to me a single instance where a fruit tree, whether with stone fruit or kernels, has re-produced the tap-root after being planted out, supposing that it has been raised in the usual way in the nursery. There are, undoubtedly, several fruit-trees which send down their lower roots deeply enough to have the appearance of descending perpendicularly, but these roots never obtain any great growth, even when in good ground, because the sap abandons them, to distribute itself in the side or horizontal roots, more favorably placed at a less distance from the surface of the ground. When the subsoil is bad, and a flag or pavement is placed under the tree to hinder the roots from losing their time in making efforts to descend, I think they at once change their direction, and proceed horizontally along the good ground above, and derive strength from it. In this way a slab or even a tile placed under a tree, at the period of its being planted, may be of great service to its growth, in hindering the roots from making injurious efforts to penetrate into the inferior soil below. Such is my opinion on this matter, as well as many other cultivators of my acquaintance, of great experience in horticultural matters.

"As to the English practice of placing gravel at the bottom of the holes dug in rich ground, of great depth, in order to prevent fruit trees from growing too luxuriantly, theory and practice declare it to be useful. The elements of the sap, derived from a great

depth, may produce much timber, although but little fruit, and of inferior quality."—*London Hort. Jour.*

THE UTILITY OF TRAINING FRUIT TREES TO PLANKS.—In the *Journal des Connaissances Usuelles*, of September, 1837, a passage occurs which states, that "it has been observed at Utrecht, and remarked as a singular circumstance, that black grapes, exposed to the south or southeast, ripen much earlier and better against planks than against a wall. The support formed of planks ought to be sheltered by a little roof about two or two and a half inches wide, to keep off the rain. This is also an excellent mode of preserving peaches." This reminds me that, about sixteen or eighteen years ago, in the Rue de l'Ouest, at Paris, a garden was taken off the street by means of planks, which were covered with plaster on the side next the street, but left bare on the part next the garden. This enclosure, though roughly executed, exists still, and may remain for a long time to come. When I saw it constructed, I at once supposed that the trees fixed to the espalier formed on the planks, would flourish better, and the fruits be finer and larger than if against the wall, which, when the sun does not shine on it, is cold and moist. Planks, on the other hand, become still hotter than the wall, under the influence of the sun, and are neither cold nor moist when out of its range. So strongly did the circumstance interest me, that I made a point of visiting the garden from time to time, in order to see if my supposition was correct. I found that I had judged quite right; the fruits are, to this day, better on the trees against the planks, than in any other part of the garden. The fact, therefore, observed at Utrecht, is quite natural, and we may take a useful hint from it. It might not be sufficient to make enclosures for gardens of planks in all instances, but they may be erected here and there in the enclosed space with advantage. Thus in the gardens at Montreuil, where peaches are produced in such vast quantities as to supply all Paris, plank divisions may, with great propriety, be employed with espalier attached to them. They should, I conceive, be always lower than the enclosure walls, for then they would throw less shade. A coping should be placed on them as usual, both to preserve the timber and to protect the trees attached to them. A layer of plaster might, in some cases, be used. If it did not grow damp, it would contribute much to the preservation of the planks. It might also be necessary

to fix stancheons at certain distances, to make the construction more solid. There can be little doubt that the expense of plank enclosures is much less than that of walls. I would recommend that this plan be tried in the neighborhood of London, as I am told that near the metropolis fruit trees on espaliers succeed better than others.—*Ib.*

OFFICERS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—The Annual Meeting for the choice of officers was held at their room, Saturday, October 20, 1838, agreeably to notice given.

The committee appointed to collect, sort and count the votes, reported the following gentlemen as chosen:

President—ELIJAH VOSE, Dorchester.

Vice Presidents—Enoch Bartlett, Roxbury, Jonathan Winship, Brighton, M. P. Wilder, Boston, John Prince, Roxbury.

Treasurer—Samuel Walker, Roxbury.

Corresponding Secretary—Robert Treat Paine, Boston.

Recording Secretary—Ezra Weston, Jr., Boston.

Counsellors—T. Lyman, Jr. Boston, Augustus Aspinwall, Brookline, Thomas Brewer, Roxbury, Henry A. Breed, Lynn, George W. Brimmer, Boston, Joseph S. Cabot, Salem, E. Hersey Derby, Salem, N. Morton Davis, Plymouth, David Haggerston, Watertown, Joseph G. Joy, Boston, William Kenrick, Newton, John Lemist, Roxbury, William Lincoln, Worcester, Thomas Lee, Brookline, Charles Lawrence, Salem, Benjamin Rodman, New Bedford, M. P. Sawyer, Boston, Charles Tappan, Boston, Aaron D. Williams, Roxbury, Jonathan Winship, Brighton, William Worthington, Dorchester, Thomas Whitmarsh, Northampton.

Professor of Botany and Vegetable Physiology—Rev. John L. Russell.

Professor of Entomology—T. W. Harris, M. D.

Professor of Horticultural Chemistry—J. W. Webster, M. D.

STANDING COMMITTEES.

Committee on Fruits. Wm. Kenrick, Chairman, Robert Manning, Sam'l Downer, Benjamin V. French, E. M. Richards, John A. Kenrick, John M. Ives, Salem, P. B. Hovey, Jr., L. P. Grosvenor, J. L. L. F. Warren, Samuel Pond, W. H. Cowen.

Committee on the Products of Kitchen Garden.—J. L. L. F.

Warren, Samuel Pond, Aaron D. Williams, Rufus Howe, Ebenezer Crafts.

Committee on Flowers, Shrubs, etc.—S. Walker, Chairman, C. M. Hovey, J. Breck, S. Sweetser, D. Haggerston, S. R. Johnson, W. Carter, John Towne.

Committee on the Library.—E. Vose, Chairman, R. T. Paine, W. Kenrick, E. Weston, Jr., C. M. Hovey, M. P. Wilder, Thomas Lee.

Committee on Synonyms of Fruit.—J. Lowell, Chairman, R. Manning, W. Kenrick, S. Downer.

Executive Committee.—E. Vose, Chairman, C. Newall, B. V. French, E. M. Richards, E Bartlett.

Committee on Finance.—E. Vose, Chairman, B. V. French, L. P. Grosvenor.

Col. Wilder proposed the Abbe Berlese, of Paris, as Honorary Member—and M. J. Rudz, Jr., of Frankfort on Main, Germany, as Corresponding Member.

Forcing Fruit Trees. — In Austria, Hungary, Moravia, and Bohemia, a mode of forcing certain fruit-trees is practised, which it may not uninteresting to mention. In hot houses, fifteen to eighteen feet high, and from nine to twelve feet deep, square cases are prepared in the ground about three feet in depth, and equally broad. In these are to be placed such trees as are fixed on for forcing, such as Reine-claude plums, and other similar fruits. When the frost arrives after November, care is taken to uncover, in a great measure, the roots of the trees the day before they are to be removed. A mass of earth, of about eighteen or twenty inches in diameter, is left at the bottom of the tree, and a quantity of water is poured on the roots then nearly exposed. The frost seizes on this immediately, and the tree feels the effects of the cold more powerfully in consequence. On the morrow the tree is taken up, and removed on a machine, prepared for the purpose, to the cases already prepared in the hot house. The earth surrounding the roots is left on, and the temperature is immediately increased, and maintained until the fruit begins to knit. The effects of the frost on the earth surrounding the roots, by degrees, disappear, and the tree receives the influence of the heat, as if the spring-time had replaced winter, and vegetation had commenced. Care must be taken that the trees be often watered, in order to preserve a proper

degree of freshness. During the flowering, this may be omitted. When the fruit has once knit, the temperature must be raised, as takes place in summer. The maturity of fruit comes, as a matter of course, and generally the crop is very abundant.—*Hort. Jour.*

CHARCOAL, USEFUL IN THE PRESERVATION OF PLANTS.—One of the great inconveniences of low and moist grounds is, the difficulty they present in cultivating flower roots of every description. These are generally destroyed by a kind of mouldiness which attaches itself to the shoots below, at different periods of their growth. It is easy to know when a plant has been thus attacked, for the stem assumes a dirty green color, approaching a yellow. The yellow soon supersedes the other, and the leaves change and sometimes fall off. The only means of preventing this evil, which most commonly attacks a number of plants at the same time, is to place a layer of powdered charcoal over the parts where the roots are to be planted. The best kind of charcoal for this purpose is, that which remains in dust after the large pieces have been taken away. When the earth has been prepared in the usual way for the reception of roots, about half an inch of the charcoal powder should be spread over the surface, the whole should then be lightly stirred together, in order that the charcoal should be incorporated with the earth. We have tried many experiments to prove the efficacy of this remedy, and in no instance has there been a failure. Thus, in a bed of roots fifteen feet long by five wide, situated in a low moist soil, two thirds were a short time back, prepared in the way above stated, while the remainder were left undefended. The result was, that in the latter portion the roots were lost, whilst in the other we never had finer plants. The powder should be preserved dry, and, generally speaking, it may be used with advantage in the flower garden.—*Ib.*

QUINCY MARKET.

[Reported for the Horticultural Register.]

APPLES, Baldwin,	barrel,	1 75	to 2 00
Russett,	do.	1 50	to 1 75
Fall,	do.	1 25	
Sweet,	do.	1 75	to 2 00
BEANS, White	bushel,	1 75	to 2 00
BEETS,	do.	62½	
BERBERRIES,	do.	1 50	
CABBAGES,	dozen,	75	to 1 00
CAULIFLOWER,	head,	17	to 25
CELERY,	bunch,	6	to 12
CRANBERRIES,	bushel,	1 50	to 1 75
CHESNUTS,	do.	1 62	
GRAPES, Malaga,	pound,	25	
Black Hamburgh,	do.	50	to 75
GARLIC,	do.	20	
LEMONS,	box,	4 00	
ORANGES,	hundred,	2 50	
ONIONS,	bushel,	1 00	
White,	do.	1 12½	
PARSLEY,	peck,	25	
PARSNIPS,	bushel,	75	
POTATOES, Eastport,	barrel,	2 00	
Chenangoes,	do.	1 62½	
Common,	do.	1 50	
Sweet,	bushel,	1 25	
PEARS, Baking,	do.	1 50	
Eating,	doz.	37½	to 50
QUINCES,	peck,	37½	
RUTA BAGA,	bushel,	40	
SQUASH, Winter, of sorts,	pound,	1	
SPINACH,	peck,	25	
TURNIPS,	bushel,	25	

Boston, November 20, 1838.